

10/549977

32999_SEQLIST.TXT

SEQUENCE LISTING

JC17 Rec'd PCT/PTO 20 SEP 2005

<110> Iourgenko, Vadim
Labow, Mark A.
Song, Chuanzheng
Zhang, Wenjun
Zhu, Jian

<120> Cyclic AMP Response Element Activator
Proteins and Uses Related Thereto

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<150> 60/463,934

<151> 2003-04-18

<160> 39

<170> FastSEQ for windows Version 4.0

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Gln Tyr Leu Gln Leu Gly Pro Ser Arg Gly Gln Tyr Gly Gly Ser
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Leu Pro Asn Val Asn Gln Ile Gly Ser Gly Thr Met Asp Leu Pro Phe
65     70     75     80
Gln Pro Ser Gly Phe Leu Gly Glu Ala Leu Ala Ala Ala Pro Val Ser
85     90     95
Leu Thr Pro Phe Gln Ser Ser Gly Leu Asp Thr Ser Arg Thr Thr Arg
100    105    110
His His Gly Leu Val Asp Arg Val Tyr Arg Glu Arg Gly Arg Leu Gly
115    120    125
Ser Pro His Arg Arg Pro Leu Ser Val Asp Lys His Gly Arg Gln Ala
130    135    140
Asp Ser Cys Pro Tyr Gly Thr Met Tyr Leu Ser Pro Pro Ala Asp Thr
145    150    155    160
Ser Trp Arg Arg Thr Asn Ser Asp Ser Ala Leu His Gln Ser Thr Met
165    170    175
Thr Pro Thr Gln Pro Glu Ser Phe Ser Ser Gly Ser Gln Asp Val His
180    185    190
Gln Lys Arg Val Leu Leu Leu Thr Val Pro Gly Met Glu Glu Thr Thr
195    200    205
Ser Glu Ala Asp Lys Asn Leu Ser Lys Gln Ala Trp Asp Thr Lys Lys
210    215    220
Thr Gly Ser Arg Pro Lys Ser Cys Glu Val Pro Gly Ile Asn Ile Phe
225    230    235    240
Pro Ser Ala Asp Gln Glu Asn Thr Thr Ala Leu Ile Pro Ala Thr His
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Asn Thr Gly Gly Ser Leu Pro Asp Leu Thr Asn Ile His Phe Pro Ser
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Pro Leu Pro Thr Pro Leu Asp Pro Glu Glu Pro Thr Phe Pro Ala Leu
275    280    285
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Gly Ile Gly Gly Ala Gly Gln Gly Met Ser Thr Pro Gly Ser Ser Pro
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Gln His Arg Pro Ala Gly Val Ser Pro Leu Ser Leu Ser Thr Glu Ala
325    330    335
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| | 370 | | | | | 375 | | | | | 380 | | | | |
| Pro | Pro | Pro | Pro | Pro | Pro | Ala | Ser | Gln | Gln | Pro | Pro | Pro | Pro | Pro | Pro |
| 385 | | | | | 390 | | | | 395 | | | | | | 400 |
| Pro | Pro | Gln | Ala | Pro | Val | Arg | Leu | Pro | Pro | Gly | Gly | Pro | Leu | Leu | Pro |
| | | | 405 | | | | | 410 | | | | | 415 | | |
| Ser | Ala | Ser | Leu | Thr | Arg | Gly | Pro | Gln | Pro | Pro | Pro | Leu | Ala | Val | Thr |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Val | Pro | Ser | Ser | Leu | Pro | Gln | Ser | Pro | Pro | Glu | Asn | Pro | Gly | Gln | Pro |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Ser | Met | Gly | Ile | Asp | Ile | Ala | Ser | Ala | Pro | Ala | Leu | Gln | Gln | Tyr | Arg |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Thr | Ser | Ala | Gly | Ser | Pro | Ala | Asn | Gln | Ser | Pro | Thr | Ser | Pro | Val | Ser |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Asn | Gln | Gly | Phe | Ser | Pro | Gly | Ser | Ser | Pro | Gln | His | Thr | Ser | Thr | Leu |
| | | | 485 | | | | | | 490 | | | | | 495 | |
| Gly | Ser | Val | Phe | Gly | Asp | Ala | Tyr | Tyr | Glu | Gln | Gln | Met | Ala | Ala | Arg |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Gln | Ala | Asn | Ala | Leu | Ser | His | Gln | Leu | Glu | Gln | Phe | Asn | Met | Met | Glu |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Asn | Ala | Ile | Ser | Ser | Ser | Ser | Leu | Tyr | Ser | Pro | Gly | Ser | Thr | Leu | Asn |
| | 530 | | | | | 535 | | | | | 540 | | | | |
| Tyr | Ser | Gln | Ala | Ala | Met | Met | Gly | Leu | Thr | Gly | Ser | His | Gly | Ser | Leu |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Pro | Asp | Ser | Gln | Gln | Leu | Gly | Tyr | Ala | Ser | His | Ser | Gly | Ile | Pro | Asn |
| | | | 565 | | | | | | 570 | | | | | 575 | |
| Ile | Ile | Leu | Thr | Val | Thr | Gly | Glu | Ser | Pro | Pro | Ser | Leu | Ser | Lys | Glu |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Leu | Thr | Ser | Ser | Leu | Ala | Gly | Val | Gly | Asp | Val | Ser | Phe | Asp | Ser | Asp |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Ser | Gln | Phe | Pro | Leu | Asp | Glu | Leu | Lys | Ile | Asp | Pro | Leu | Thr | Leu | Asp |
| | 610 | | | | | 615 | | | | | 620 | | | | |
| Gly | Leu | His | Met | Leu | Asn | Asp | Pro | Asp | Met | Val | Leu | Ala | Asp | Pro | Ala |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
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23

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32999_SEQLIST.TXT

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<210> 16
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35     40     45
Ser Thr Arg Leu Gln Ala Gln Lys Leu Arg Leu Ala Tyr Thr Arg Ser
50     55     60
Ser His Tyr Gly Gly Ser Leu Pro Asn Val Asn Gln Ile Gly Ser Gly
65     70     75     80
Leu Ala Glu Phe Gln Ser Pro Leu His Ser Pro Leu Asp Ser Ser Arg
85     90     95
Ser Thr Arg His His Gly Leu Val Glu Arg Val Gln Arg Asp Pro Arg

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| | | | | | | | | | | | | | | | | | | |
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| | | | Pro | Pro | Pro | | | | | | | | | | | | | |
| Pro | Tyr | Ser | Pro | Ala | Tyr | Leu | 120 | 135 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 |
| Arg | Thr | Met | Ala | Trp | Gly | Asn | Phe | Pro | Ala | Glu | Lys | Gly | Gln | Leu | Phe | His | 185 | 190 |
| Arg | Leu | Pro | Ser | Ala | Leu | Asn | Arg | Thr | Ser | Ser | Asp | Ser | Ala | Leu | His | 195 | 200 | 205 |
| Thr | Ser | Val | Met | Asn | Pro | Ser | Pro | Gln | Asp | Thr | Tyr | Pro | Gly | Pro | Thr | 210 | 215 | 220 |
| Pro | Pro | Ser | Ile | Leu | Pro | Ser | Arg | Arg | Gly | Gly | Ile | Leu | Asp | Gly | Glu | 225 | 230 | 235 |
| Met | Asp | Pro | Lys | Val | Pro | Ala | Ile | Glu | Glu | Asn | Leu | 205 | 210 | 215 | 220 | 225 | 230 | 235 |
| His | Leu | Leu | Lys | Pro | Trp | Asp | Ala | Lys | Lys | Leu | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser |
| Arg | Pro | Arg | Ser | Cys | 230 | Glu | Val | Pro | Gly | Ile | Asn | Ile | Phe | Pro | Ser | 240 | 245 | 250 |
| Asp | Gln | Pro | Ala | Asn | Val | Pro | Val | Leu | Pro | Pro | Ala | Met | Asn | Thr | Gly | 255 | 260 | 265 |
| Gly | Ser | Leu | Pro | Asp | Leu | Thr | Asn | Leu | His | Phe | Pro | Pro | Pro | Leu | Pro | 270 | 275 | 280 |
| Thr | Pro | Leu | Asp | Pro | Glu | Glu | Thr | Ala | Tyr | Pro | Ser | Leu | Ser | Gly | Gly | 285 | 290 | 295 |
| Asn | Ser | Thr | Ser | Asn | Leu | Thr | His | Thr | Met | Thr | His | Leu | Gly | Ile | Ser | 300 | 305 | 310 |
| Arg | Gly | His | Gly | Pro | Gly | Pro | Gly | Tyr | Asp | Ala | Pro | Gly | Leu | His | Ser | 315 | 320 | 325 |
| Pro | Leu | Ser | His | Pro | Ser | Leu | Gln | Ser | Ser | Leu | Ser | Asn | Pro | Asn | Leu | 330 | 335 | 340 |
| Gln | Ala | Ser | Leu | Ser | Ser | Pro | Gln | Pro | Gln | Leu | Gln | Gly | Val | Leu | Pro | 345 | 350 | 355 |
| His | Pro | Ser | Leu | Pro | Ala | Ser | Ser | Leu | Ala | Cys | His | Val | Leu | Pro | Thr | 360 | 365 | 370 |
| Thr | Ser | Leu | Gly | His | Pro | Ser | Leu | Ser | Ala | Pro | Ala | Leu | Ser | Ser | Ser | 375 | 380 | 385 |
| Ser | Ser | Ser | Ser | Ser | Thr | Ser | Ser | Pro | Val | Leu | Gly | Ala | Pro | Ser | Tyr | 390 | 395 | 400 |
| Pro | Ala | Ser | Thr | Pro | Gly | Ala | Ser | Pro | Val | His | His | Arg | Arg | Val | Leu | 405 | 410 | 415 |
| Ser | Pro | Leu | Ser | Leu | Leu | Ala | Gly | Pro | Ala | Asp | Ala | Arg | Arg | Arg | Ser | 420 | 425 | 430 |
| Gln | Gln | Leu | Pro | Lys | Gln | Phe | Ser | Pro | Thr | Met | Ser | Pro | Thr | Leu | Ser | 435 | 440 | 445 |
| Ser | Ile | Thr | Gln | Gly | Val | Pro | Leu | Asp | Thr | Ser | Lys | Leu | Ser | Thr | Asp | 450 | 455 | 460 |
| Gln | Arg | Leu | Pro | Pro | Tyr | Pro | Tyr | Ser | Ser | Pro | Ser | Leu | Val | Leu | Pro | 465 | 470 | 475 |
| Thr | Gln | Pro | His | Thr | Pro | Lys | Ser | Leu | Gln | Gln | Pro | Gly | Leu | Pro | Ser | 480 | 485 | 490 |
| Gln | Ser | Cys | Ser | Val | Gln | Ser | Ser | Gly | Gly | Gln | Pro | Pro | Pro | Arg | Gln | 495 | 500 | 505 |
| Ser | His | Tyr | Gly | Thr | Pro | Tyr | Pro | Pro | Gly | Pro | Ser | Ser | His | Gly | Gln | 510 | 515 | 520 |
| Gln | Ser | Tyr | His | Arg | Pro | Met | Ser | Asp | Phe | Asn | Leu | Gly | Asn | Leu | Glu | 525 | 530 | 535 |
| Gln | Phe | Ser | Met</ | | | | | | | | | | | | | | | |

32999_SEQLIST.TXT

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 Pro Gly Phe Ser Lys Glu Ile Ala Ala Ala Leu Ala Gly Val Pro Gly
 625 630 635 640
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 645 650 655
 Glu Leu Arg Met Glu Pro Leu Gly Leu Glu Gly Leu Asn Met Leu Ser
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<210> 17
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<400> 17
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17

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<210> 19
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 <213> Artificial sequence

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32999_SEQLIST.TXT

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 <211> 619
 <212> PRT
 <213> human

<400> 25

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35      40      45
Lys Leu Gln Gln Leu Arg Leu Thr Gln Tyr His Gly Gly Ser Leu Pro
50      55      60
Asn Val Ser Gln Leu Arg Ser Asn Ala Ser Glu Phe Gln Pro Ser Phe
65      70      75      80
His Gln Ala Asp Asn Val Arg Gly Thr Arg His His Gly Leu Val Glu
85      90      95
Arg Pro Ser Arg Asn Arg Phe His Pro Leu His Arg Arg Ser Gly Asp
100      105      110
Lys Pro Gly Arg Gln Phe Asp Gly Ser Ala Phe Gly Ala Asn Tyr Ser
115      120      125
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130      135      140
Asp Glu Lys His Pro Gly Phe Arg Leu Thr Ser Ala Leu Asn Arg Thr
145      150      155      160
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165      170      175
Asp Pro Tyr Gly Gly Gly Gly Gln Ser Ala Trp Pro Ala Pro Tyr Met
180      185      190      195
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195      200      205
Pro Gly Pro Leu Lys Glu Glu Asn Leu Leu Asn Val Pro Lys Pro Leu
210      215      220
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225      230      235      240
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Gln Asn Leu Gly Leu Ser Pro Phe Leu Gly Thr Leu Asn Thr Gly Gly
260      265      270
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275      280      285
Ser Leu Asp Thr Thr Asp His His Phe Gly Ser Met Ser Val Gly Asn
290      295      300
Ser Val Asn Asn Ile Pro Ala Ala Met Thr His Leu Gly Ile Arg Ser
305      310      315      320
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Leu Asn Lys Thr Val Leu Ser Ser Ser Leu Asn Asn His Pro Gln Thr

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Pro | Asn | Ala | Ser | Ala | Leu | His | Pro | Ser | Leu | Arg | Leu | Phe | Ser |
| Leu | Ser | 355 | Pro | Ser | Leu | Ser | 360 | Thr | Asn | Leu | Ser | 365 | Pro | Ser | Arg |
| Arg | Arg | 370 | Gln | Pro | Val | Ser | 375 | Leu | Thr | Leu | Ser | 380 | Gly | Pro | Glu |
| 385 | His | Gln | Gly | Phe | Ser | Arg | Gln | Leu | Ser | 395 | Thr | Ser | Pro | Leu | 400 |
| Ala | Tyr | Pro | Thr | Ser | Gln | Met | Val | Ser | Ser | 410 | Asp | Arg | Ser | Gln | 415 |
| Phe | Leu | Pro | Thr | Glu | Ala | Gln | Ala | Gln | Val | Ser | Pro | Pro | Pro | Pro | Tyr |
| Pro | Ala | Pro | Gln | Glu | Leu | Thr | Gln | Pro | Leu | Leu | Gln | Gln | Pro | Arg | Ala |
| Pro | Glu | Ala | Pro | Ala | Gln | Gln | Pro | Gln | Ala | Ala | Ser | Ser | Leu | Pro | Gln |
| 465 | Ser | Asp | Phe | Gln | Leu | Pro | Ala | Gln | Gly | Ser | Ser | Leu | Thr | Asn | Phe |
| Phe | Pro | Asp | Val | Gly | Phe | Asp | Gln | Gln | Ser | Met | Arg | Pro | Gly | Pro | Ala |
| Phe | Pro | Gln | Gln | Val | Pro | Leu | Val | Gln | Gln | Gly | Ser | Arg | Glu | Leu | Gln |
| Asp | Ser | Phe | His | Leu | Arg | Pro | Ser | Pro | Tyr | Ser | Asn | Cys | Gly | Ser | Leu |
| Pro | Asn | Thr | Ile | Leu | Pro | Glu | Asp | Ser | Ser | Thr | Ser | Leu | Phe | Lys | Asp |
| 545 | Leu | Asn | Ser | Ala | Leu | Ala | Gly | Leu | Pro | Glu | Val | Ser | Leu | Asn | Val |
| Thr | Pro | Phe | Pro | Leu | Glu | Glu | Glu | Leu | Gln | Ile | Glu | Pro | Leu | Ser | Leu |
| Asp | Gly | Leu | Asn | Met | Leu | Ser | Asp | Ser | Ser | Met | Gly | Leu | Leu | Asp | Pro |
| Ser | Val | Glu | Glu | Thr | Phe | Arg | Ala | Asp | Arg | Leu | | | | | |
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<211> 2992
<212> DNA
<213> drosophila melanogaster
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| ggcacagcgg | aattcgagcg | gatcatgaag | gaggtgtatg | ccacgaagag | ggatgagccg | 120 | |
| cctgcgaatc | agaagatcct | agacggcctt | gtcggcggtc | aggaggtaag | ccaatcctcg | 180 | |
| ccaggcgcac | gcaatgggac | ggcgcgaggt | ggcagtggtt | ccggcagctg | agccagcggc | 240 | |
| ggaggagcct | caccagatgg | cctgggaggc | ggcgggtggt | ctccgacggc | ttatcgagaa | 300 | |
| tcccgagggc | gcagcgtagg | tgtgggtccc | atgcaagac | cgtcggagcg | caagcaggat | 360 | |
| cgttcgccct | acggcagcag | cagtacgcaa | caaaccttag | acaacggcca | gctaaatccg | 420 | |
| catcttcttt | gtccacctac | ggcggagagt | ttgtggcggc | ggctcagctc | cgattcggcg | 480 | |
| ctgcaccaaa | gtgcgctggt | ggcgggtctt | aatagcgacg | tgaactcgat | ggcgccaac | 540 | |
| tatcagcagc | agcaacatca | gcaacaacag | caaccgggcc | agccaagatc | tcactcgccg | 600 | |
| caccatggta | taaacaggac | catgagtccg | caggcgcaac | ggaggaagtc | gccgctactg | 660 | |
| cagccccatc | agctgcagtt | gcagcaactg | caacagcagc | agcaacagat | gcaacatcag | 720 | |
| catcagctgc | accagcagct | ccaaatgcag | cagctgcaac | agcaccagca | gcaacaccag | 780 | |
| cagcagcagc | aacaacagaa | cacgccatac | aacaacgcca | aattcacgaa | tcctgtgttc | 840 | |
| cggccgctgc | aggatcaggt | caactttgcc | aacaccggct | ccctgcccga | tctcacggcc | 900 | |
| cttcaaaact | atggacccca | gcagcagcag | cagcaatccc | agcaacagcc | gtcgcagcaa | 960 | |
| caacagcagt | tgcagcaaac | cctgtcgcca | gtcatgtctc | cgcacaatca | ccgccgcgaa | 1020 | |
| cggagatcagt | gcgccagtc | gtttagtccg | gcgggtggag | gaggggggag | aggtcccggg | 1080 | |
| tgcgccctatc | agcagcaaca | gcactcgccc | accggaaca | cgcaacagca | gcagcagcag | 1140 | |
| caccaacagc | ccagcaactc | gccgcacctg | tcctttacca | atctggccac | cacgcaggca | 1200 | |

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<211> 797

<212> PRT

<213> drosophila melanogaster

<400> 27

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Tyr Ala Thr Lys Arg Asp Glu Pro Ala Asn Gln Lys Ile Leu Asp
35      40      45
Gly Leu Val Gly Gly Gln Glu Val Ser Gln Ser Ser Pro Gly Ala Gly
50      55      60
Asn Gly Thr Gly Gly Gly Ser Gly Ser Gly Ser Gly Ala Ser Gly
65      70      75      80
Gly Gly Ala Ser Pro Asp Gly Leu Gly Gly Gly Gly Ser Pro Thr
85      90      95
Ala Tyr Arg Glu Ser Arg Gly Arg Ser Val Gly Val Gly Pro Met Arg
100     105     110
Arg Pro Ser Glu Arg Lys Gln Asp Arg Ser Pro Tyr Gly Ser Ser Ser
115     120     125
Thr Gln Gln Thr Leu Asp Asn Gly Gln Leu Asn Pro His Leu Leu Gly
130     135     140
Pro Pro Thr Ala Glu Ser Leu Trp Arg Arg Ser Ser Asp Ser Ala
145     150     155     160
Leu His Gln Ser Ala Leu Val Ala Gly Phe Asn Ser Asp Val Asn Ser
165     170     175
Met Gly Ala Asn Tyr Gln Gln Gln Gln His Gln Gln Gln Gln Gln Pro
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195     200     205

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245                                     250                                     255
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Leu  Asn  Gly  Ala  Gly  Asn  Asn  Asn  Ser  Ser  Ser  Gly  Gly  Gly  Thr  Ala
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Gln  Asp  Pro  Leu  Gly  Ile  Thr  Ser  Pro  Val  Pro  Ser  Pro  Leu  Gly
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Cys  Pro  Ser  Ser  Pro  Leu  Pro  Ile  Pro  Ile  Pro  Met  Ser  Ala  Gln  Ser
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Ser  Pro  Gln  Gln  Gln  His  His  His  His  Gln  Gln  Gln  Gln  Gln  His
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His  Ser  Pro  His  His  Ser  Pro  Met  His  Ser  Pro  His  His  Gly  Asn  Ser
675                                     680                                     685
Pro  Leu  Ser  Ser  Ser  Ser  Pro  Val  Ser  His  Asn  Ala  Cys  Ser  Asn  Ser
690                                     695                                     700
Asn  Val  Val  Met  Asn  His  Gln  Gln  Gln  Gln  Gln  His  His  His  Gln

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32999_SEQLIST.TXT

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| | | | | 725 | Ile | Ile | Phe | Ser | Asp | Tyr | Ser | Ser | Asn | Ala | Asp | Tyr |
| Asn | Ile | Pro | Ser | 740 | | | | | 745 | | | | | 750 | | |
| Thr | Arg | Glu | Ile | Phe | Asp | Ser | Leu | 760 | Asp | Leu | Asp | Leu | Gly | 765 | Gln | Met |
| Val | Ala | Gly | Leu | Gln | Met | Leu | Ser | 775 | Asp | Gln | Asn | Pro | Ile | 780 | Met | Ile |
| 770 | | | | | | | | | | | | | | | | |
| Asp | Pro | Asn | Ile | Glu | Asp | Ser | Phe | Arg | Arg | Asp | Leu | Asn | | | | |
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 <213> mouse

<220>
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 <222> 1528
 <223> n = A,T,C or G

<400> 28

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| gaaatttagc | gagaagatcg | cactgcacaa | ccagaagcag | gcggaggaga | cggcggcctt | 120 |
| cgaggaggtc | atgaaggacc | tgagcctgac | gcggggccgc | cggttcagc | tgcagaagtc | 180 |
| ccagtacctg | cagctgggcc | ccagccgtgg | ccagtactac | ggtgggtccc | tgcccaacgt | 240 |
| gaaccagatt | ggaagcagca | gcgtggacct | ggccttcag | acccatttc | agtcctcagg | 300 |
| cctggacacg | agtcggacca | cacgacatca | tgggcttg | gacagagtat | atcgtgagcg | 360 |
| tggcagactt | ggctccccgc | accgtcgacc | cctgtcagta | gacaagcatg | ggcgacaggc | 420 |
| tgacagctgc | ccctatggga | ccgtgtacct | ctcgcctcct | gcggacacca | gctggaggag | 480 |
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| ggaggacacc | ggggctgaga | cagacaagac | cctttctaag | cagtcatggg | actcaaagaa | 660 |
| ggcgggttcc | aggcccaagt | cctgtgaggt | ccccggaatc | aacatctttc | cgtctgcaga | 720 |
| ccaggagaac | acaacagccc | tgatccctgc | caccacaaac | acagggggct | cccttcctga | 780 |
| cctcaccaac | atccacttcg | cctccccact | cccgcaccca | ctggaccctg | aggagcctcc | 840 |
| gttccttgct | ctcaccagct | ccagcagcac | cggcagcctt | gcacatctgg | gcgttggcgg | 900 |
| cgcaggcggg | atgaacaccc | ccagctcttc | tccacagcac | cggccagcag | tcgtcagccc | 960 |
| cctgtccctg | agcacagagg | ccaggcggca | gcaggcccag | cagggtgtcac | ccaccctgtc | 1020 |
| tccgttgctc | cccatacttc | aggccgtggc | tatggatgcc | ctgtccttgg | agcagcagct | 1080 |
| gccctatgcc | ttcttcaccc | agactggctc | ccagcagcct | ccccacagc | cccagccacc | 1140 |
| gcctccacct | ccaccggtat | cccagcagca | gccaccacct | ccacaggtgt | ctgtgggcct | 1200 |
| cccccagggt | ggtccactgc | tgcccagctg | cagcctgact | cgggggcccc | agctgccacc | 1260 |
| actctcagtt | actgtaccat | ccactcttcc | ccagtcccc | acagagaacc | caggccagtc | 1320 |
| accaatgggg | atcgatgcca | cttcggcacc | agctctgcag | taccgcacga | gtgcagggtc | 1380 |
| acctgccacc | cagtctccca | cctctccggt | ctccaaccaa | ggcttctccc | ctggaagctc | 1440 |
| cccacagcac | acgtccaccc | tgggcagcgt | gtttggggat | gcgtactatg | agcagcagat | 1500 |
| gacagccagg | caggccaatg | ctctgtcncg | ccagctggag | cagttcaaca | tgatggagaa | 1560 |
| cgccatcagc | tccagcagcc | tatacaaccc | gggtccaca | ctcaactatt | cccaggctgc | 1620 |
| catgatgggt | ctgagcggga | gccacggggg | cctacaggac | ccgcagcagc | tcggctacac | 1680 |
| aggccacggt | ggaatcccca | acatcatcct | cacggtgaca | ggagagtcac | caccgagcct | 1740 |
| ctctaaggaa | ctgagcagca | cactggcagg | agtcagtgat | gtcagctttg | attcggacca | 1800 |
| tcagtttcca | ctggacgagc | tgaagattga | ccctctgacc | ctggacggac | tccatatggt | 1860 |
| gaatgaccca | gacatggttt | tagccgaccc | agccaccgag | gacaccttcc | gaatggaccg | 1920 |
| cctgtgagtg | gctgtgcccc | ccagccgccc | ctggctcagtc | tccaacggcg | ctgccccaaa | 1980 |
| cctggggacg | gcaatggcgt | ccccctttgc | caacggccaa | gcttgtgggt | ctgagcttgc | 2040 |
| aatgctgccc | agtggccctg | ccagcccccc | gccacccccg | tcgttcacct | cccagtgatg | 2100 |
| ctggcgtgcg | tgaggccgct | gtgtactagg | ctggctatct | gtctgtccat | ccatctacct | 2160 |
| ggggtcaggc | tgatggccga | ggctgtgagt | ggctggcccc | catggatggt | ccccgtgctc | 2220 |
| gctccctcac | ccctcactgg | ggatgtgaga | gccctcatca | gatacccaaa | gtgtcactca | 2280 |
| cttcacgcat | gtgctgtgca | acggaggggc | ggggcgtggg | tgtggagcgc | ccagaggcct | 2340 |

32999_SEQLIST.TXT

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tcccaccgcc atccct 2416

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<212> PRT
<213> mouse

<400> 29

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| His | Asn | Gln | Lys | Gln | Ala | Glu | Glu | Thr | Ala | Ala | Phe | Glu | Glu | Val | Met |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Lys | Asp | Leu | Ser | Leu | Thr | Arg | Ala | Arg | Leu | Gln | Leu | Gln | Lys | Ser | |
| | | 35 | | | | | 40 | | | | 45 | | | | |
| Gln | Tyr | Leu | Gln | Leu | Gly | Pro | Ser | Arg | Gly | Gln | Tyr | Tyr | Gly | Gly | Ser |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Leu | Pro | Asn | Val | Asn | Gln | Ile | Gly | Ser | Ser | Ser | Val | Asp | Leu | Ala | Phe |
| 65 | | | | 70 | | | | | 75 | | | | | | 80 |
| Gln | Thr | Pro | Phe | Gln | Ser | Ser | Gly | Leu | Asp | Thr | Ser | Arg | Thr | Thr | Arg |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| His | His | Gly | Leu | Val | Asp | Arg | Val | Tyr | Arg | Glu | Arg | Gly | Arg | Leu | Gly |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Ser | Pro | His | Arg | Arg | Pro | Leu | Ser | Val | Asp | Lys | His | Gly | Arg | Gln | Ala |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Asp | Ser | Cys | Pro | Tyr | Gly | Thr | Val | Tyr | Leu | Ser | Pro | Pro | Ala | Asp | Thr |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Ser | Trp | Arg | Arg | Thr | Asn | Ser | Asp | Ser | Ala | Leu | His | Gln | Ser | Thr | Met |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Thr | Pro | Ser | Gln | Ala | Glu | Ser | Phe | Thr | Gly | Gly | Ser | Gln | Asp | Ala | His |
| | | | 165 | | | | | | 170 | | | | 175 | | |
| Gln | Lys | Arg | Val | Leu | Leu | Leu | Thr | Val | Pro | Gly | Met | Glu | Asp | Thr | Gly |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Ala | Glu | Thr | Asp | Lys | Thr | Leu | Ser | Lys | Gln | Ser | Trp | Asp | Ser | Lys | Lys |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ala | Gly | Ser | Arg | Pro | Lys | Ser | Cys | Glu | Val | Pro | Gly | Ile | Asn | Ile | Phe |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Pro | Ser | Ala | Asp | Gln | Glu | Asn | Thr | Thr | Ala | Leu | Ile | Pro | Ala | Thr | His |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Asn | Thr | Gly | Gly | Ser | Leu | Pro | Asp | Leu | Thr | Asn | Ile | His | Phe | Ala | Ser |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Pro | Leu | Pro | Thr | Pro | Leu | Asp | Pro | Glu | Pro | Pro | Phe | Pro | Pro | Ala | Leu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Thr | Ser | Ser | Ser | Ser | Thr | Gly | Ser | Leu | Ala | His | Leu | Gly | Val | Gly | Gly |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Ala | Gly | Gly | Met | Asn | Thr | Pro | Ser | Ser | Ser | Pro | Gln | His | Arg | Pro | Ala |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Val | Val | Ser | Pro | Leu | Ser | Leu | Ser | Thr | Glu | Ala | Arg | Arg | Gln | Gln | Ala |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Gln | Gln | Val | Ser | Pro | Thr | Leu | Ser | Pro | Leu | Ser | Pro | Ile | Thr | Gln | Ala |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Val | Ala | Met | Asp | Ala | Leu | Ser | Leu | Glu | Gln | Gln | Leu | Pro | Tyr | Ala | Phe |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Phe | Thr | Gln | Thr | Gly | Ser | Gln | Gln | Pro | Pro | Pro | Gln | Pro | Gln | Pro | Pro |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Pro | Pro | Pro | Pro | Pro | Val | Ser | Gln | Gln | Gln | Pro | Pro | Pro | Pro | Gln | Val |
| | 370 | | | | | 375 | | | | | | 380 | | | |
| Ser | Val | Gly | Leu | Pro | Gln | Gly | Gly | Pro | Leu | Leu | Pro | Ser | Ala | Ser | Leu |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Thr | Arg | Gly | Pro | Gln | Leu | Pro | Pro | Leu | Ser | Val | Thr | Val | Pro | Ser | Thr |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Leu | Pro | Gln | Ser | Pro | Thr | Glu | Asn | Pro | Gly | Gln | Ser | Pro | Met | Gly | Ile |
| | | | 420 | | | | | 425 | | | | | 430 | | |

32999_SEQLIST.TXT

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 Pro Ala Thr Gln Ser Pro Thr Ser Pro Val Ser Asn Gln Gly Phe Ser
 450 455 460
 Pro Gly Ser Ser Pro Gln His Thr Ser Thr Leu Gly Ser Val Phe Gly
 465 470 475 480
 Asp Ala Tyr Tyr Glu Gln Gln Met Thr Ala Arg Gln Ala Asn Ala Leu
 485 490 495
 Ser Arg Gln Leu Glu Gln Phe Asn Met Met Glu Asn Ala Ile Ser Ser
 500 505 510
 Ser Ser Leu Tyr Asn Pro Gly Ser Thr Leu Asn Tyr Ser Gln Ala Ala
 515 520 525
 Met Met Gly Leu Ser Gly Ser His Gly Gly Leu Gln Asp Pro Gln Gln
 530 535 540
 Leu Gly Tyr Thr Gly His Gly Gly Ile Pro Asn Ile Ile Leu Thr Val
 545 550 555 560
 Thr Gly Glu Ser Pro Pro Ser Leu Ser Lys Glu Leu Ser Ser Thr Leu
 565 570 575
 Ala Gly Val Ser Asp Val Ser Phe Asp Ser Asp His Gln Phe Pro Leu
 580 585 590
 Asp Glu Leu Lys Ile Asp Pro Leu Thr Leu Asp Gly Leu His Met Leu
 595 600 605
 Asn Asp Pro Asp Met Val Leu Ala Asp Pro Ala Thr Glu Asp Thr Phe
 610 615 620
 Arg Met Asp Arg Leu
 625

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 <213> fugu rubripres

<400> 30
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 Lys Asp Leu Asn Val Thr Arg Ala Ala Arg Leu Gln Leu Gln Lys Thr
 35 40 45
 Gln Tyr Leu Gln Leu Gly Gln Asn Arg Gly Gln Tyr Gly Gly Ser
 50 55 60
 Leu Pro Asn Val Asn Gln Ile Gly Asn Gly Asn Ile Asp Leu Pro Phe
 65 70 75 80
 Gln Val Ser Asn Ser Val Leu Asp Thr Ser Arg Thr Thr Arg His His
 85 90 95
 Gly Leu Val Glu Arg Val Tyr Arg Asp Arg Asn Arg Ile Ser Ser Pro
 100 105 110
 His Arg Arg Pro Leu Ser Val Asp Lys His Gly Arg Gln Arg Thr Asn
 115 120 125
 Ser Asp Ser Ala Leu His Gln Ser Ala Met Asn Pro Lys Pro His Glu
 130 135 140
 Val Phe Ala Gly Gly Ser Gln Glu Leu Gln Pro Lys Arg Leu Leu Leu
 145 150 155 160
 Thr Val Pro Gly Thr Glu Lys Ser Glu Ser Asn Ala Asp Lys Asp Ser
 165 170 175
 Gln Glu Gln Ser Trp Asp Asp Lys Lys Ser Ile Phe Pro Ser Pro Asp
 180 185 190
 Gln Glu Leu Asn Pro Ser Val Leu Pro Ala Ala His Asn Thr Gly Gly
 195 200 205
 Ser Leu Pro Asp Leu Thr Asn Ile Gln Phe Pro Pro Pro Leu Ser Thr
 210 215 220
 Pro Leu Asp Pro Glu Asp Thr Val Thr Phe Pro Ser Leu Ser Ser Ser

32999_SEQLIST.TXT

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| | Val | Ala | Ser | His | Gly | Asn | Asn | Gly | Glu | Lys | Asn | Ile | Phe | Phe | Leu | Lys | |
| | Thr | Cys | Thr | Ser | Cys | Glu | Asp | Val | Tyr | Asp | Phe | Tyr | Phe | Val | Gly | Ile | |
| | Pro | Thr | Ser | Ser | Gln | Thr | Thr | Met | Thr | Ala | Thr | Ala | Gln | Arg | Arg | Gln | |
| | Pro | Pro | Val | Val | Pro | Leu | Thr | Leu | Thr | Ser | Asp | Leu | Thr | Leu | Gln | Gln | |
| | Ser | Pro | Gln | Gln | Leu | Ser | Pro | Thr | Leu | Ser | Ser | Pro | Ile | Asn | Ile | Thr | |
| | Gln | Ser | Met | Lys | Leu | Ser | Ala | Ser | Ser | Leu | Gln | Gln | Tyr | Arg | Asn | Gln | |
| | Thr | Gly | Ser | Pro | Ala | Thr | Gln | Ser | Pro | Thr | Ser | Pro | Val | Ser | Asn | Gln | |
| | Gly | Phe | Ser | Pro | Gly | Ser | Ser | Pro | Gln | Pro | Gln | His | Ile | Pro | Val | Val | |
| | Gly | Ser | Ile | Phe | Gly | Asp | Ser | Phe | Tyr | Asp | Gln | Gln | Leu | Ala | Leu | Arg | |
| | Gln | Thr | Asn | Ala | Leu | Ser | His | Gln | Val | Cys | Glu | Asp | Gly | Arg | Arg | Leu | |
| | Glu | Ile | Thr | His | Val | Arg | Leu | Ser | Arg | Leu | His | Ala | Glu | Leu | Cys | Phe | |
| | Cys | Phe | Ser | Gln | Leu | Glu | Gln | Phe | Asn | Met | Ile | Glu | Asn | Pro | Ile | Ser | |
| | Ser | Thr | Ser | Leu | Tyr | Asn | Gln | Cys | Ser | Thr | Leu | Asn | Tyr | Thr | Gln | Ala | |
| | Ala | Met | Met | Gly | Leu | Thr | Gly | Ser | Ser | Leu | Gln | Asp | Ser | Gln | Gln | Leu | |
| | Gly | Tyr | Gly | Asn | His | Gly | Asn | Ile | Pro | Asn | Ile | Ile | Leu | Thr | Ile | Ser | |
| | Val | Thr | Gly | Glu | Ser | Pro | Pro | Ser | Leu | Ser | Lys | Glu | Leu | Thr | Asn | Ser | |
| | Leu | Ala | Gly | Val | Gly | Asp | Val | Ser | Phe | Asp | Pro | Asp | Thr | Gln | Phe | Pro | |
| | Leu | Asp | Glu | Leu | Lys | Ile | Asp | Pro | Leu | Thr | Leu | Asp | Gly | Leu | His | Met | |
| | Leu | Asn | Asp | Pro | Asp | Met | Val | Leu | Ala | Asp | Pro | Ala | Thr | Glu | Asp | Thr | |
| | Phe | Arg | Met | Asp | Arg | Leu | | | | | | | | | | | |

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 <212> DNA
 <213> fugu rubripres

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 gcccggttaa gacagctgca gttacagaag acccagtatt tgcaactagg gcagaatcgt 180
 ggacagtact atggaggctc actgcccaat gtcaatcaga ttggaaatgg caacattgac 240
 ctgccttttc aggtgagcag gacaaactca gactcagctt tacatcagag tgccatgaat 300
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32999_SEQLIST.TXT

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 <212> PRT
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Lys Asp Leu Ser Leu Thr Arg Ala Ala Arg Leu Gln Leu Gln Lys Ser
 35      40      45
Gln Tyr Leu Gln Leu Gly Pro Ser Arg Gly Gln Tyr Tyr Gly Gly Ser
 50      55      60
Leu Pro Asn Val Asn Gln Ile Gly Ser Gly Thr Met Asp Leu Pro Phe
 65      70      75      80
Gln Pro Ser Gly Phe Leu Gly Glu Ala Leu Ala Ala Pro Val Ser
 85      90      95
Leu Thr Pro Phe Gln Ser Ser Gly Leu Asp Thr Ser Arg Thr Thr Arg
100      105      110
His His Gly Leu Val Asp Arg Val Tyr Arg Glu Arg Gly Arg Leu Gly
115      120      125
Ser Pro His Arg Arg Pro Leu Ser Val Asp Lys His Gly Arg Gln Ala
130      135      140
Asp Ser Cys Pro Tyr Gly Thr Met Tyr Leu Ser Pro Pro Ala Asp Thr
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Ser Trp Arg Arg Thr Asn Ser Asp Ser Ala
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Lys Asp Leu Ser Leu Thr Arg Ala Ala Arg Leu Gln Leu Gln Lys Ser
 35      40      45
Gln Tyr Leu Gln Leu Gly Pro Ser Arg Gly Gln Tyr Tyr Gly Gly Ser
 50      55      60
Leu Pro Asn Val Asn Gln Ile Gly Ser Gly Thr Met Asp Leu Pro Phe
 65      70      75      80
Gln Pro Ser Gly Phe Leu Gly Glu Ala Leu Ala Ala Pro Val Ser

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32999_SEQLIST.TXT

| | | | | | | | | | | | | | | | | | |
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| Leu | Thr | Pro | Phe | Gln | Ser | Ser | Gly | Leu | Asp | Thr | Ser | Arg | Thr | Thr | Arg | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| His | His | Gly | Leu | Val | Asp | Arg | Val | Tyr | Arg | Glu | Arg | Gly | Arg | Leu | Gly | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Ser | Pro | His | Arg | Arg | Pro | Leu | Ser | Val | Asp | Lys | His | Gly | Arg | Gln | Ala | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Asp | Ser | Cys | Pro | Tyr | Gly | Thr | Met | Tyr | Leu | Ser | Pro | Pro | Ala | Asp | Thr | | |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | | | |
| Ser | Trp | Arg | Arg | Thr | Asn | Ser | Asp | Ser | Ala | Leu | His | Gln | Ser | Thr | Met | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| Thr | Pro | Thr | Gln | Pro | Glu | Ser | Phe | Ser | Ser | Gly | Ser | Gln | Asp | Val | His | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| Gln | Lys | Arg | Val | Leu | Leu | Leu | Thr | Val | Pro | Gly | Met | Glu | Glu | Thr | Thr | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| Ser | Glu | Ala | Asp | Lys | Asn | Leu | Ser | Lys | Gln | Ala | Trp | Asp | Thr | Lys | Lys | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | |
| Thr | Gly | Ser | Arg | Pro | Lys | Ser | Cys | Glu | Val | Pro | Gly | Ile | Asn | Ile | Phe | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| Pro | Ser | Ala | Asp | Gln | Glu | Asn | Thr | Thr | Ala | Leu | Ile | Pro | Ala | Thr | His | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Asn | Thr | Gly | Gly | Ser | Leu | Pro | Asp | Leu | Thr | Asn | Ile | His | Phe | Pro | Ser | | |
| | | 260 | | | | | | 265 | | | | | 270 | | | | |
| Pro | Leu | Pro | Thr | Pro | Leu | Asp | Pro | Glu | Pro | Thr | Phe | Pro | Ala | Leu | | | |
| | | 275 | | | | | 280 | | | | 285 | | | | | | |
| Ser | Ser | Ser | Ser | Ser | Thr | Gly | Asn | Leu | Ala | Ala | Asn | Leu | Thr | His | Leu | | |
| | 290 | | | | | 295 | | | | | 300 | | | | | | |
| Gly | Ile | Gly | Gly | Ala | Gly | Gln | Gly | Met | Ser | Thr | Pro | Gly | Ser | Ser | Pro | | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | | |
| Gln | His | Arg | Pro | Ala | Gly | Val | Ser | Pro | Leu | Ser | Leu | Ser | Thr | Glu | Ala | | |
| | | | | 325 | | | | | 330 | | | | | 335 | | | |
| Arg | Arg | Gln | Gln | Ala | Ser | Pro | Thr | Leu | Ser | Pro | Leu | Ser | Pro | Ile | Thr | | |
| | | | 340 | | | | | 345 | | | | | 350 | | | | |
| Gln | Ala | Val | Ala | | | | | | | | | | | | | | |
| | | | 355 | | | | | | | | | | | | | | |

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 <211> 494
 <212> PRT
 <213> human

<400> 34

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| Met | Ala | Thr | Ser | Asn | Asn | Pro | Arg | Lys | Phe | Ser | Glu | Lys | Ile | Ala | Leu | | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | | |
| His | Asn | Gln | Lys | Gln | Ala | Glu | Glu | Thr | Ala | Ala | Phe | Glu | Glu | Val | Met | | |
| | | | 20 | | | | | 25 | | | | | 30 | | | | |
| Lys | Asp | Leu | Ser | Leu | Thr | Arg | Ala | Ala | Arg | Leu | Gln | Leu | Gln | Lys | Ser | | |
| | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Gln | Tyr | Leu | Gln | Leu | Gly | Pro | Arg | Gly | Gln | Tyr | Met | Asp | Leu | Pro | Phe | | |
| | 50 | | | | | 55 | | | | 60 | | | | | | | |
| Leu | Pro | Asn | Val | Asn | Gln | Ile | Gly | Ser | Gly | Thr | Met | Asp | Leu | Pro | Phe | | |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | | | |
| Gln | Pro | Ser | Gly | Phe | Leu | Gly | Glu | Ala | Leu | Ala | Ala | Ala | Pro | Val | Ser | | |
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| Leu | Thr | Pro | Phe | Gln | Ser | Ser | Gly | Leu | Asp | Thr | Ser | Arg | Thr | Thr | Arg | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| His | His | Gly | Leu | Val | Asp | Arg | Val | Tyr | Arg | Glu | Arg | Gly | Arg | Leu | Gly | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Ser | Pro | His | Arg | Arg | Pro | Leu | Ser | Val | Asp | Lys | His | Gly | Arg | Gln | Ala | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Asp | Ser | Cys | Pro | Tyr | Gly | Thr | Met | Tyr | Leu | Ser | Pro | Pro | Ala | Asp | Thr | | |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | | | |

32999_SEQLIST.TXT

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Ser Trp Arg Arg Thr Asn Ser Asp Ser Ala Leu His Gln Ser Thr Met
165 170 175
Thr Pro Thr Gln Pro Glu Ser Phe Ser Ser Gly Ser Gln Asp Val His
180 185 190
Gln Lys Arg Val Leu Leu Leu Thr Val Pro Gly Met Glu Thr Thr
195 200 205
Ser Glu Ala Asp Lys Asn Leu Ser Lys Gln Ala Trp Asp Thr Lys Lys
210 215 220
Thr Gly Ser Arg Pro Lys Ser Cys Glu Val Pro Gly Ile Asn Ile Phe
225 230 235 240
Pro Ser Ala Asp Gln Glu Asn Thr Thr Ala Leu Ile Pro Ala Thr His
245 250 255
Asn Thr Gly Gly Ser Leu Pro Asp Leu Thr Asn Ile His Phe Pro Ser
260 265 270
Pro Leu Pro Thr Pro Leu Asp Pro Glu Glu Pro Thr Phe Pro Ala Leu
275 280 285
Ser Ser Ser Ser Ser Thr Gly Asn Leu Ala Ala Asn Leu Thr His Leu
290 295 300
Gly Ile Gly Gly Ala Gly Gln Gly Met Ser Thr Thr Pro Gly Ser Ser Pro
305 310 315 320
Gln His Arg Pro Ala Gly Val Ser Pro Leu Ser Leu Ser Thr Glu Ala
325 330 335
Arg Arg Gln Gln Ala Ser Pro Thr Leu Ser Pro Leu Ser Pro Ile Thr
340 345 350
Gln Ala Val Ala Met Asp Ala Leu Ser Leu Glu Gln Gln Leu Pro Tyr
355 360 365
Ala Phe Phe Thr Gln Ala Gly Ser Gln Gln Pro Pro Pro Gln Pro Gln
370 375 380
Pro Pro Pro Pro Pro Pro Ala Ser Gln Gln Gln Pro Pro Pro Pro Pro
385 390 395 400
Pro Pro Gln Ala Pro Val Arg Leu Pro Pro Gly Gly Pro Leu Leu Pro
405 410 415
Ser Ala Ser Leu Thr Arg Gly Pro Gln Pro Pro Pro Leu Ala Val Thr
420 425 430
Val Pro Ser Ser Leu Pro Gln Ser Pro Pro Glu Asn Pro Gly Gln Pro
435 440 445
Ser Met Gly Ile Asp Ile Ala Ser Ala Pro Ala Leu Gln Gln Tyr Arg
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Thr Ser Ala Gly Ser Pro Ala Asn Gln Ser Pro Thr Ser Pro Val Ser
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Lys Asp Leu Ser Leu Thr Arg Ala Arg Leu Gln Leu Gln Lys Ser
35 40 45
Gln Tyr Leu Gln Leu Gly Pro Ser Arg Gly Gln Tyr Tyr Gly Gly Ser
50 55 60
Leu Pro Asn Val Asn Gln Ile Gly Ser Gly Thr Met Asp Leu Pro Phe
65 70 75 80
Gln Pro Ser Gly Phe Leu Gly Glu Ala Leu Ala Ala Ala Pro Val Ser
85 90 95
Leu Thr Pro Phe Gln Ser Ser Gly Leu Asp Thr Ser Arg Thr Thr Arg

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[illegible]

32999_SEQLIST.TXT

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 <213> human

<400> 36

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Gly | Ser | Gln | Asp | Val | His | Gln | Lys | Arg | Val | Leu | Leu | Leu | Thr | Val |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Pro | Gly | Met | Glu | Glu | Thr | Thr | Ser | Glu | Ala | Asp | Lys | Asn | Leu | Ser | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gln | Ala | Trp | Asp | Thr | Lys | Lys | Thr | Gly | Ser | Arg | Pro | Lys | Ser | Cys | Glu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Val | Pro | Gly | Ile | Asn | Ile | Phe | Pro | Ser | Ala | Asp | Gln | Glu | Asn | Thr | Thr |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ala | Leu | Ile | Pro | Ala | Thr | His | Asn | Thr | Gly | Gly | Ser | Leu | Pro | Asp | Leu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Thr | Asn | Ile | His | Phe | Pro | Ser | Pro | Leu | Pro | Thr | Pro | Leu | Asp | Pro | Glu |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Glu | Pro | Thr | Phe | Pro | Ala | Leu | Ser | Ser | Ser | Ser | Ser | Thr | Gly | Asn | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ala | Ala | Asn | Leu | Thr | His | Leu | Gly | Ile | Gly | Gly | Ala | Gly | Gln | Gly | Met |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Ser | Thr | Pro | Gly | Ser | Ser | Pro | Gln | His | Arg | Pro | Ala | Gly | Val | Ser | Pro |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Leu | Ser | Leu | Ser | Thr | Glu | Ala | Arg | Arg | Gln | Gln | Ala | Ser | Pro | Thr | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Ser | Pro | Leu | Ser | Pro | Ile | Thr | Gln | Ala | Val | Ala | Met | Asp | Ala | Leu | Ser |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Leu | Glu | Gln | Gln | Leu | Pro | Tyr | Ala | Phe | Phe | Thr | Gln | Ala | Gly | Ser | Gln |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Gln | Pro | Pro | Pro | Gln | Pro | Gln | Pro | Pro | Pro | Pro | Pro | Pro | Pro | Ala | Ser |
| | 210 | | | | | 215 | | | | | | 220 | | | |
| Gln | Gln | Pro | Pro | Pro | Pro | Pro | Pro | Pro | Gln | Ala | Pro | Val | Arg | Leu | Pro |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Pro | Gly | Gly | Pro | Leu | Leu | Pro | Ser | Ala | Ser | Leu | Thr | Arg | Gly | Pro | Gln |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Pro | Pro | Leu | Ala | Val | Thr | Val | Pro | Ser | Ser | Leu | Pro | Gln | Ser | Pro |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Pro | Glu | Asn | Pro | Gly | Gln | Pro | Ser | Met | Gly | Ile | Asp | Ile | Ala | Ser | Ala |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Pro | Ala | Leu | Gln | Gln | Tyr | Arg | Thr | Ser | Ala | Gly | Ser | Pro | Ala | Asn | Gln |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Ser | Pro | Thr | Ser | Pro | Val | Ser | Asn | Gln | Gly | Phe | Ser | Pro | Gly | Ser | Ser |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Pro | Gln | His | Thr | Ser | Thr | Leu | Gly | Ser | Val | Phe | Gly | Asp | Ala | Tyr | Tyr |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Glu | Gln | Gln | Met | Ala | Ala | Arg | Gln | Ala | Asn | Ala | Leu | Ser | His | Gln | Leu |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Glu | Gln | Phe | Asn | Met | Met | Glu | Asn | Ala | Ile | Ser | Ser | Ser | Ser | Leu | Tyr |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Ser | Pro | Gly | Ser | Thr | Leu | Asn | Tyr | Ser | Gln | Ala | Ala | Met | Met | Gly | Leu |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Thr | Gly | Ser | His | Gly | Ser | Leu | Pro | Asp | Ser | Gln | Gln | Leu | Gly | Tyr | Ala |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Ser | His | Ser | Gly | Ile | Pro | Asn | Ile | Ile | Leu | Thr | Val | Thr | Gly | Glu | Ser |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Pro | Pro | Ser | Leu | Ser | Lys | Glu | Leu | Thr | Ser | Ser | Leu | Ala | Gly | Val | Gly |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Asp | Val | Ser | Phe | Asp | Ser | Asp | Ser | Gln | Phe | Pro | Leu | Asp | Glu | Leu | Lys |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Ile | Asp | Pro | Leu | Thr | Leu | Asp | Gly | Leu | His | Met | Leu | Asn | Asp | Pro | Asp |

32999_SEQLIST.TXT

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 Leu

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<220>
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<210> 38
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